

Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)

NT/Flight Equipment Division

November 24, 1998

PCN-1, Dated 03/09/2001

Verify that this is the correct version before use



**National Aeronautics and
Space Administration**

**Lyndon B. Johnson Space Center
Houston, Texas**

Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 1 of 10

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November 24, 1998

Approved by

Original Signed by
David F. Thelen, Chief
Flight Equipment Division

Concurrence:

Original Signed by
G. Lee Norbraten, Director
ISO 9000 Office

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Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 2 of 10

Change Record

Revision	Date	Originator/Phone	Description
Baseline	11/24/98	Pedro Rivera 244-5299	Baseline Release
PCN-1	03/09/2001	MLC	<ul style="list-style-type: none"> • Changed OSIAD to FED as a result of the SR&QA reorganization that occurred February 2001. • Added QSP concurrence signature. • Removed division level from document number (from NT1-CWI-004 to NT-CWI-004).

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	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 3 of 10

1 PURPOSE

The purpose of this procedure is to establish the order and steps which are required to perform a pre-delivery readiness review for determining the spaceflight readiness of flight equipment. This procedure requires the documentation of results on JSC Form 1027, JSC Flight Equipment Pre-Delivery Readiness Review. The JSC Form 1027 serves as a checklist to status the flight equipment and authorize delivery (shipment) for flight integration.

NOTE: The JSC Form 1027 does not certify flight equipment for spaceflight use.

2 SCOPE

The JSC Form 1027 shall be completed for all flight equipment delivered from JSC to the Kennedy Space Center launch site, or at a destination other than the launch site for flight integration (i.e., USA-Flight Crew Equipment/EVA, local offsite contractors, etc.). **NOTE: No flight equipment shall be delivered for flight integration without an approved JSC Form 1027. For non-JSC Flight Equipment, the JSC Form 1027 use is limited to a record of open items (TPS or DRs only) status while in JSC's custody, unless otherwise specified by the TR.**

Local offsite contractors (i.e. USA-FCE/EVA, etc) shall comply with this procedure when generating the JSC Form 1027 or NASA approved equivalent, including Non-JSC Flight Equipment in their custody.

3 DEFINITIONS

Flight Equipment: Items (Payloads, Experiments, Flight Crew Equipment/ Extravehicular Activity Government Furnished Equipment, Detailed Test Objectives, etc.) developed and provided for spaceflight integration and use by JSC or other Non-JSC organizations.

Open Issues: Issues which have not been resolved, by the appropriate authority(ies) prior to delivery for flight integration. (i.e. incomplete work or processing, non-dispositioned non-conformances or problem reports, lack of approved flight certification, etc.).

4 QUALITY RECORDS AND FORMS

JSC Form 1027, Flight Equipment Pre-Delivery Readiness Review

5 SAFETY PRECAUTIONS AND WARNING NOTES

None

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Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 4 of 10

6 REFERENCES

NSTS 08117, *Requirements and Procedures for Certification of Flight Readiness*

JSC-SLP-4.7, *Control of Customer Supplied Product*

JSC-SLP-4.10, *Inspection and Testing*

JSC-SLP-4.15 *Handling, Storage, Packaging, Preservation, and Delivery.*

7 TOOLS, EQUIPMENT, AND MATERIALS

None

8 PERSONNEL TRAINING AND CERTIFICATION

None

9 RESPONSIBILITIES

Technical Representative (TR): The person or persons responsible for identifying the flight equipment to be delivered and any associated open issues concerning the flight equipment, supporting resolution of open issues and approving the JSC Form 1027 to authorize delivery for flight integration. (TR activities may be performed by such functions as: launch package managers, product custodian, project, subsystem, payload integration, or product engineering functions, etc.). The TR shall provide advance notification to the QAR of any pending open issues requiring resolution prior to delivery. The TR shall document any additional specified requirements (inspection & tests per SLP 4.10 or certification activities, etc) for Non-JSC Flight Equipment.

Quality Assurance Representative (QAR): The assigned SR&QA person responsible for conducting pre-delivery readiness reviews for flight. Activities of the QAR involve review of open issues to assure proper resolution, certification status of the flight equipment, has been verified, if applicable, and to assure that the JSC Form 1027 is initiated and properly completed.

Quality Assurance Record Center (QARC): The SR&QA function responsible for performing open item review (Task Preparation Sheets (TPS) and Discrepancy Reports (DRs) only), assigning JSC Form 1027 control number, identifying limited life data (limited life data for JSC Flight Equipment only, if applicable), and inputting JSC Form 1027 data into the QARC database. The QARCs are co-located within the JSC technical divisions.

10 PROCEDURE

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Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 5 of 10

NOTE: All applicable blocks in a line item shall be annotated, or marked with N/A

- | | |
|------------------|--|
| Initiator | 1. Identify nomenclature, part number, serial number/lot number, and quantity of flight equipment to be delivered, date, flight, mission or destination, hazardous items, open issues, and shipping document number . |
| TR | 2. Print and sign , identify mail code and telephone number to authorize flight integration. |
| QAR | 3. Request an open items query (TPSs, DRs) from QARC |
| QARC | 4. Perform open items query in QARC database and provide results to QAR. |
| QAR | 5. For JSC Flight Equipment:

Request limited life data from QARC, if applicable. |
| QARC | 6. Perform limited life query and provide results to QAR. |
| QAR | 7. Enter the expiration date, or cycles remaining, in the limited life block on the JSC Form 1027. This indicates remaining life available to accomplish mission objectives on equipment which is limited life (time/cycle) sensitive. Enter as N/A for non-JSC Flight Equipment. |
| QAR | 8. Request from QARC JSC Form 1027 document control number. Offsite QARs may request document control numbers by phone. |
| QARC | 9. Provide or enter document control number |
| QAR | 10. For JSC Flight Equipment:
Coordinate with the appropriate JSC Safety and Mission Assurance Offices or database. Verify the certification status of flight equipment being delivered for flight integration. Input status with "Open or Closed" on the JSC Form 1027. Verify there are no unresolved problem reports. |
| QAR | 11. For non-JSC Flight Equipment (i.e. Customer Supplied Product per SLP 4.7, International Partners, Contractor Furnished Equipment, other Government/NASA centers GFE, payloads, etc): |

NOTE: If specified by TR, verify status of any documented required additional testing, inspections or certification activities.

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Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 6 of 10

QAR 12. Identify any open issues in the JSC Form 1027. Notify the technical representative of any open issues and continue to step 13. If no open issues, enter N/A in the S&MA block and skip to step 17.

QAR 13. Verify the open issue is not previously exempted in Appendix A, Open Issue Exceptions. If open issue is listed, identify in Remarks/Notes blocks "No constraint for flight integration per Open Issue Exceptions". Skip to step 17. If not listed, continue to step 14.

ALL	14.	OPEN ISSUE AUTHORITY:
		FOR JSC FLIGHT EQUIPMENT:
		The JSC technical representative as well as the responsible QAR (or the S&MA engineer for S&MA issues) will support resolution of the issue. If the open issue cannot be resolved, the appropriate SR&QA division chief will be notified for approval per NSTS 08117. If unresolved, the issue shall be elevated for the approval of the appropriate program manager. The SR&QA, Engineering, and, if appropriate, specialized technical authority shall present their risk assessments and recommendations to the program manager.. The program manager will be the final authority to proceed with delivery of the flight equipment for flight integration.
		FOR NON-JSC FLIGHT EQUIPMENT:
		The technical representative and the QAR will support resolution of the issue identified while in JSCs custody. If the issue cannot be resolved, the appropriate SR&QA division chief will be notified for approval. The Technical Representative shall be the final authority to proceed with delivery of the item for flight integration.

QAR 15. If approval of the responsible authority is obtained, the following statement shall be recorded on JSC Form 1027, NOTES/REMARKS prior to release of the flight equipment for delivery "This issue is not a constraint to release this item for flight integration use on STS-XXX (list mission or designation) or destination".

Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 7 of 10

- QAR** 16. Signature or per telecon annotation of the Safety and Mission Assurance representative or SR&QA Division Chief is not required on the JSC Form 1027 S&MA Representative block unless an open issue has been documented on the JSC Form 1027. Otherwise, only the Quality Assurance Representative and Technical Representative signatures are required.

If the issue is elevated for Program Manager for JSC Flight Equipment or TR for Non-JSC Flight Equipment final authority, the program manager or TR shall sign or the QAR shall annotate in the "REMARKS/NOTES" block of the JSC Form 1027.

- QAR** 17. **Sign & print**, date, identify mail code and telephone number in JSC Form 1027 **ONLY** after adequate resolution of all open issues or approval is received.

- QAR** 18. Retain a copy and distribute copies of the completed JSC Form 1027 to the Record Center.

NOTE: IF THE FLIGHT EQUIPMENT IS TO BE DELIVERED TO USA-FCE/EVA, SKIP STEPS 19-23 and go to step 24. Otherwise, if not being delivered to USA-FCE/EVA, continue with steps 19-23 only.

- QAR** 19. Verify transfer document number and document control number is entered. (i.e. JSC Form 290).

- QAR** 20. Stamp JSC Form 1027 after verifying flight equipment against shipping document.

- TR** 21. Deliver Flight Equipment per SLP 4.15 .

- QAR** 22. Provide completed JSC Form 1027 to the QARC.

- QARC** 23. Process JSC Form 1027 .

IF FLIGHT EQUIPMENT DELIVERED TO USA-FCE/EVA:

- QAR** 24. Verify transfer document number and document control number is entered.

- QAR** 25. Stamp JSC Form 1027 after verifying flight equipment against shipping

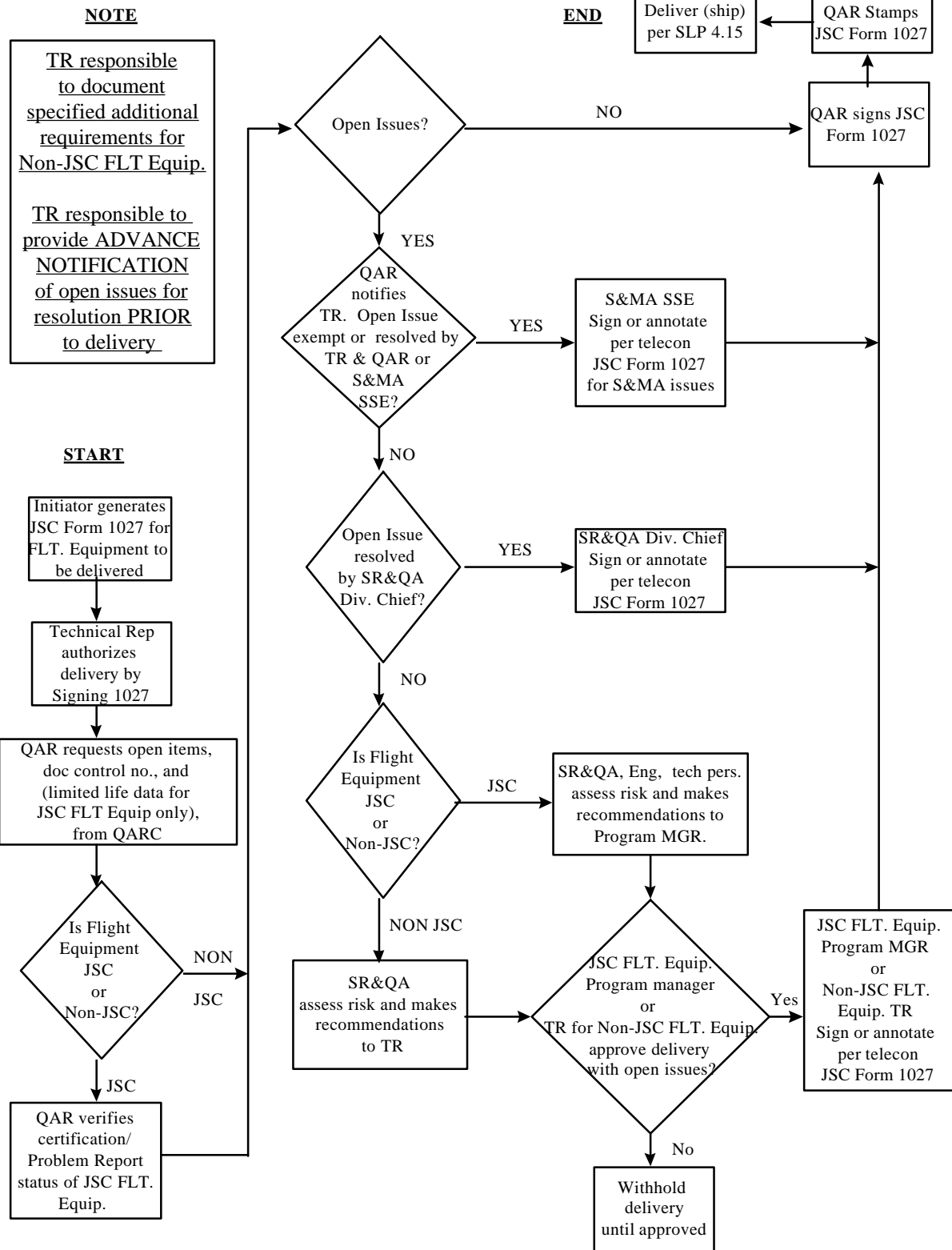
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Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 8 of 10

- document.
- QAR** 26. Attach copy of completed JSC Form 1027 to shipping document (i.e. TPS, JSC Form 290) being released to USA-FCE/EVA, only.
- TR** 27. Deliver Flight Equipment per SLP 4.15 .
- QAR** 28. Provide original of JSC Form 1027 to the QARC.
- QARC** 29. Process completed JSC Form 1027

Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 9 of 10

11. FLOWCHART



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Flight Equipment Division JSC Common Work Instruction	Flight Equipment Pre-Delivery Readiness Review (JSC Form 1027)	
	Document No.: NT-CWI-004	Revision: Baseline
	Date: 11/24/98	Page 10 of 10

APPENDIX A OPEN ISSUE EXCEPTIONS

ENVIRONMENTAL TESTING

An open waiver for a noncompliance to an environmental testing specification is also an open certification issue, but does not require an appropriate SR&QA Division Chief signature approval on the JSC Form 1027. The only SR&QA signatures required on the JSC Form 1027 showing an open noncompliance to specification waiver that has been agreed to by the technical community (i.e. SR&QA, Engineering, Stress, Materials, and specialized technical authorities) are the S&MA Subsystem and Quality Engineers for JSC Flight Equipment. The concurrence of the technical community shall be documented by dispositioning the discrepancy report (DR) documenting the noncompliance as “not a constraint to releasing this item for flight integration” and obtaining the signatures on the DR of the recognized specialized technical. This action shall be verified by the Quality Engineer and coordinated with the S&MA Subsystem Engineer.